

## METHOD AND SYSTEM CONSTITUTING A VIRTUAL COLLECTIVE ENTITY FOR MARKET-EFFICIENT RETAIL PURCHASE OF GOODS AND SERVICES

This invention relates to improvements in commerce in goods and services which exploit e-commerce in a novel way. More particularly, the invention relates to brokering methods, systems, software, and internet sites to implement or facilitate the creation of multiple, product or service-specific, virtual, transient or enduring, purchasing collectives, preferably operated through the internet, which give the members of the collectives an opportunity to purchase goods and services that either they could not otherwise purchase individually or at prices normally available only to high volume purchasers.

Free markets forever have been governed by supply and demand, which are affected by countless interrelated factors affecting the supply of goods or services and the demand for goods and services in any particular location at any particular time. One immutable economic principle governing commercial purchase and sales transactions for fungible goods, ranging from barley to a sophisticated new model of computer, is that a purchaser of a large number of units of the product or service inherently will have a price advantage over a low volume purchase. Economies of scale and/or the inherent inefficiency in time and effort of many individual small transactions perhaps is the reason for this.

Prototypical of this phenomenon is modern trade in securities issued by companies representing equity, debt, or other investment vehicles. For example, small quantities of new issues normally are not available from underwriters for purchase by retail investors except through institutional purchasers such as mutual funds or as favored clients of selected brokerage houses. The price per share of the issue is set by the investment banking house preferably so as to have the demand exceed supply, and price rises as retail or institutional buyers bid up the cost of the shares after they enter the public markets. Another example is block trades wherein institutions trade among each other large blocks of shares through the trading desks of investment banks. In this case, an institutional holder seeking to liquidate a large position in a particular security can sell into the market, possibly significantly depressing the price of the stock, or, as frequently occurs, can make a block trade. In a block trade a single purchaser of all or a large fraction of the position will buy the securities at or below market with minimum disruption to the market price of that security.

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Means to overcome the disadvantages of retail buying historically have involved the formation of purchasing collectives. For example, in the middle-ages bakers learned they could purchase flour from the local miller at a more advantageous price if they agreed among themselves to make one large order on behalf of a group, and then to distribute the flour to members of the group in accordance with some prearranged formula based on volume consumption.

Still another example is the development of commerce involving (depending on the industry) manufacturers who deal with distributors who deal with wholesalers who deal with retailers who deal with consumers. The number of units of the goods in question handled by merchants at these various levels decrease along the chain of distribution and the unit cost of the goods increases.

A well-known form for distributing product directly but in accordance with market forces is for an offeror to conduct an auction including top bid, dutch and other types of auctions. Top bid auctions involve purchasers submitting unconditional purchase offers at a specified price. The highest priced offer is the top bid. The prevailing top bid at the close of the auction wins and therefore buys the product. Contrary to the goal of allowing retail buyers to purchase at prices comparable to wholesale or institutional buyers, top bid auctions secure the highest possible price for the seller.

There are several forms of dutch auction. In one type, the price of each item diminishes during the auction. Purchasers who bid for an item can buy at the then current price. If no more buyers are found at that price, the auction manager decreases the price of the remaining units of that item. This process is repeated until no more units remain. This type of dutch auction also ensures a higher price for the seller than would occur if the entire lot was purchased at the lowest acceptable price, which is how the wholesale buyers or distributors would operate.

Another form of dutch auction applies to the purchase of large lots at a single, fixed lot price. In this case, prospective purchasers of the goods make bids at set prices for a set quantity of goods. At the end of the auction, the auction manager determines the price. The price is set at that price at or above which the cumulative bids exceed the quantity of units in the lot. Allocations are made in descending order of price such that bids above the final price are satisfied in full (at the final price) prior to filling bids at the final price. Bids below the final price are rejected.

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Currently, offerings of financial securities are managed by investment banking firms who act as underwriters. The lead underwriter effectively runs the "book" of bids and determines the final allocation of volume to institutions or retail buyers. Retail buyers typically are provided a small number of shares through the retail brokerage segments of the underwriting firms. Unlike auctions with predetermined rules, current offerings are allocated to buyers solely at the discretion of the lead underwriter in consultation with the issuer of the securities. Such allocations are determined in part based on the size of the bids made by institutions, by the previous business relationships between the specific institution and the underwriter, past record of flipping by the institution (i.e., selling the stock in the open market immediately after its purchase), likelihood of after market purchases by the institution (which can help stabilize or increase the price of the offered securities), and several other factors.

Recently, online electronic offerings of securities via the world wide web or internet have occurred. Even more recently, firms have started to conduct offerings of shares to retail buyers through the internet in offerings in which the online offeror is part of a syndicate of selling underwriters (e.g., Wit Capital), or the offeror is the lead manager and the entire offering is online (e.g., WRHambrecht & Co.). Acting as investment banks, these online service companies are acting as traditional "distributors" or seller's representatives for the securities, in contrast with being "agents" matching a group of buyers with a given seller.

Online purchase of products has also become commonplace (e.g., Amazon.com). Online auctions are also being conducted for individual products (E-bay) or a group of items (e.g., Bid.com). See, for example, U.S. 5,835,896 to Fisher et al. and U.S. 5,794,207 to Walker et al., the disclosures of which are incorporated herein by reference. However, in all of these cases, retail buyers participate individually instead of as a collective.

#### Summary of the Invention

This invention provides systems, methods and apparatus which constitute a brokerage entity operated for the benefit of consumers of goods and services which permits them to purchase their requirements at prices normally available only to larger volume purchasers. The invention involves the formation of a virtual purchasing collective which is targeted to a particular product or service, for example, to an offering of financial securities, and effectively aggregates demand for the product or service so as to increase the effective negotiating power of the members of the collective.

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Participation in the collective may be open to the public or may be open only to subscribers that open an account with the broker/agent-like entity operating the system. The consumer participants communicate with the entity electronically via a computer network such as the internet or, in some instances, via dedicated lines. The inventor has realized that because of the improvement in communications and the development of e-commerce, it is possible to create and manage transient or enduring collectives for the purchase of essentially any goods or service imaginable with the only requirement being that the goods be fungible, that is, that the goods be of a character where any unit thereof is essentially the same as any other unit of the same class of goods. Commodities and financial securities are prototypical fungible products, and of course, may be purchased in accordance with the process and system of this invention. However, many other goods and services also may qualify, including diverse products ranging from electric power to computer chips, to furniture, precious stones, petroleum products, printed materials, office products, building materials, machinery, consumer electronics, precious metals, long-distance telephone service, tickets to theaters, concerts, sports events and the like, transportation services, hotel space, railroad, air and truck delivery services, medical supplies, advertising space, clothing, pharmaceuticals, broadcast time, rental space for use as office, manufacturing space or storage, labor, insurance products, interests in real property, tax credits, and wines.

Accordingly, in one aspect, the invention provides methods and systems for selling units of a product to consumers of the product at a price per unit competitive with the price paid by bulk purchasers of the product. In many instances, a consumer's participation in the system disclosed herein may permit her to purchase items not otherwise available to her, e.g., shares of a desired initial public offering. The word consumers, as used herein, is intended to be interpreted broadly and includes, for example, purchasers of smaller amounts of goods who may or may not add value to them and then resell to an ultimate user. The terms "seller" or "offeror," as used herein, means a single entity or multiple entities which are capable of delivering, alone or together, a number of units of the goods or services. The virtual collective may submit a collective bid, as hereafter defined, to a seller or offeror, who may choose to respond by accepting the obligation to fill it. The virtual collective may also solicit bids from one or more sellers or offerors and may negotiate terms on behalf of the collective.

Broadly, the methods comprise posting in a way electronically accessible to consumers of the product, e.g., on a website, notice of a proposal to form a virtual purchasing collective. Typically, this will include notice of the availability of the units of product for purchase, and

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optionally other data informative of the qualities and specifications of the products. The data may be presented, for example, as one or more links in the website to other websites of distributors or manufacturers of the product, and need not necessarily be posted on the website of the entity implementing the method on behalf of consumers. Consumers interested in making a purchase communicate their interest so that they may be included in the virtual collective. Generally, an interested consumer will also indicate the number of units that the consumer would like to purchase and may also indicate the price she is willing to pay for those units. This information is preferably communicated as a bid, or several alternative or multiple bids, indicating the consumer's commitment to buy a number of units of the product and the price she is willing to pay for that number of units.

Consumers who have indicated their interest in participating are incorporated into a virtual purchasing collective that negotiates to make a purchase on behalf of the consumers. The negotiation may include soliciting bids from one or more third parties potentially interested in doing business with the virtual collective. The negotiation may also include placing one or more "collective bids" with one or more third party sellers (individually or collectively) of the product for a selected number of units at a selected price per unit. For example, collective bids may be formulated in the manner of a fixed price, lot dutch auction (as described above), wherein a collective bid for N units is made at the price per unit bid (by a consumer) for the Nth unit, with all consumers who bid at or above that price receiving units at that price if the bid is accepted.

Alternative ways to establish the price at which a lot is purchased by the virtual collective involve the entity conducting the auction and using the data to negotiate the lowest possible price on behalf of the buyers' collective. As long as the negotiated price is at or below the price the members of the collective are willing to pay, a successful transaction can be consummated. Optionally, a number of bids may be made to the seller of the product with bids for larger numbers of units having a lower cost per unit.

Upon concluding a transaction with a seller, the collective or the seller will typically notify the members of the collective of the acceptance, preferably by electronic communication. The units purchased from the seller may then be delivered either directly by the seller through the entity conducting the auction, or through a separate delivery organization, to some or all of the consumers willing to pay (at least) the price negotiated on behalf of the virtual collective. Preferably, the maximum price each consumer is willing to pay is communicated at the time the consumer indicates an interest in participating in the collective; more preferably, that price is part

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of an irrevocable commitment to accept the units at or below that price. Successful consumers pay for the goods, either directly or through the entity, and receive them at a market price they could not otherwise obtain. Typically, all consumers pay the same price and the number of units to be delivered to individual consumers is determined by rules known in advance and agreed to by the consumers.

Because e-commerce and the internet allow rapid communication among consumers and sellers, virtual collectives can form and conduct business in real time to aggregate demand effectively. Thus, as the size and purchasing power of a virtual collective grow, that power can be almost instantaneously communicated to one or more potential sellers. Similarly, a potential seller may respond to the growing virtual collective by accepting a collective bid or by offering more favorable terms to the collective. Some potential sellers may automate their responses based on the current purchasing power of the collective, further accelerating the process. Accordingly, in some embodiments, the effects of the growing power of the virtual collective can be observed as they occur. In other embodiments, the virtual collective may wait for a predefined period of time, or until its purchasing power reaches a predefined threshold, before negotiating with one or more potential sellers.

When consumers indicate their interest in participating in a virtual purchasing collective, they preferably commit to purchase a specified number of units at or below a specified price on or before a certain date in the future. Preferably, the website of the brokerage entity includes instructions for the buyer sufficient to enable them to place a bid electronically, set up an account, etc., to facilitate participation. The entity running the system may collect a commission from the successful bidders which take delivery and pay for their respective numbers of units, or may negotiate a commission with the seller. Alternatively, the entity may enroll potential bidders in a subscription service and collect a subscription fee. Alternatively, or in addition, the rules of the auction may permit the price per unit of a collective bid accepted by the seller to be lower than the price per unit collected from successful bidding customers so as to generate a profit. Preferably, the collective bids are calculated by the entity using the principles of a dutch auction for fixed price lots as previously described. Additional means for generating revenue and profits for the entity running the system for creating virtual collectives include receiving fees from the seller of goods or services who wishes the entity to generate orders for the seller in the manner described in this invention. In addition, advertising revenues from sellers, potential sellers or other related parties, can be generated by advertising placements at the site where the auction

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process is conducted. Furthermore, the website may maintain historical information about the virtual collectives and their members and may use that information in its own marketing efforts or may sell the information to interested third parties.

The brokerage entity may elect to purchase goods or services before, during, or after the formation of a virtual purchasing collective for later distribution to members of the collective. The entity may make the purchase before or after the proposed virtual purchasing collective has been announced and before or after any consumers have indicated their interest in joining a virtual collective. Generally, after the proposed virtual collective has been announced, interested consumers will place bids for some number of units of the good or service, indicating a price they are willing to pay for that number of units. The brokerage entity then determines, based on the accumulated bids, which consumers will receive units, how many each consumer will receive, and the price each consumer will pay. The units are delivered to the selected consumers, who pay the entity or a third party for the units.

As noted above, the internet provides a particularly powerful means to communicate efficiently with a large number of consumers. Thus, in one embodiment, consumers bid for units of a product over the internet in accordance with a set of pre-agreed rules. Units of the product are distributed to qualifying consumers, as determined by the rules, from a bulk vendor of the product. A consumer who receives a unit of the product pays for it. Payment may be sent to the entity that accumulated the bids from the consumers. Payment may also be sent to the bulk vendor of the product.

In a particular embodiment, notice of the availability of a number of units of a good or service is posted on a website. The posting includes an invitation to consumers to participate in a purchase of the goods or services and instructions how to participate. The instructions may include a fixed time at which new consumers will no longer be accepted, or a fixed number of consumers that will be accepted, or other rules fixing the circumstances under which the virtual collective will stop accepting new members. Preferably, the posting also includes an explanation of the benefits of demand aggregation. Interested consumers accept the invitation according to the posted instructions; accepting the invitation may include an irrevocable commitment from the consumer to accept a certain number of goods or services at or below a certain price. Once consumers have accepted, units of the good or service are distributed, in exchange for payment, to some or all of the consumers who accepted the invitation to participate.

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Consumers do not always know in advance the number of units of a good or service they will need. For example, although a consumer's average electricity, heating, or telephone needs may be well established, the needs may vary dramatically from one month to the next or from one year to the next. Thus, in one embodiment, a virtual collective may negotiate on behalf of consumers who do not commit to purchase a particular number of units of a good or a service. Demand is nevertheless aggregated: the virtual collective can negotiate based on the number of consumers it represents and, inferentially or explicitly, based on the number of units the consumers are likely to purchase. Preferably, a proposed virtual purchasing collective is announced over the internet, together with instructions how to participate in the collective.

Interested consumers communicate their interest over the internet and the consumers are formed into a virtual purchasing collective. The collective negotiates with one or more third party sellers to obtain favorable terms, usually including a favorable price, on behalf of the collective. The members of the collective may or may not retain the right, individually or collectively, to reject the negotiated terms for any reason. If the terms are accepted, a transaction is consummated.

In another aspect, the invention provides a system for permitting retail consumers of small numbers of units of a product to purchase the units at a price competitive with the price paid by purchasers of larger numbers of units. The system comprises means electronically accessible to the consumers for recording "retail" bids made electronically at auction under pre-agreed rules by a multiplicity of consumers. Each bid indicates the consumer's respective commitment, preferably irrevocable commitment, to buy a number of units of a particular product and the price he is willing to pay for that number, preferably at a time certain in the future. The system also includes electronic means for processing data representative of the retail bids accumulated by the recording means to determine terms of one or more collective bids to be made by the entity to a seller or offeror for a large number of units. The system also may include electronic means for identifying which bidding consumers are entitled to units and for determining the number and price of the units delivered to each such bidding consumer upon acceptance by a seller of a collective bid in accordance with the established rules of the auction. All three of these elements of the system may be embodied in a suitably programmed general purpose computer or number of computers accessible by the bidding public via the internet or other network. Preferably, the system is implemented through the internet via a web page through which consumers can shop for various products they wish to purchase. Alternatively, a website may be dedicated to a single type of product, e.g., new offerings of securities.



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Those skilled in the art will be able to implement the method and system disclosed herein without undue experimentation by purchasing suitable computer hardware and programming the computer using methods known per se to implement the required functions disclosed herein.

In still another aspect, the invention provides an internet-accessible site for facilitating purchase by consumers of a small number of units of a product at a price per unit competitive with that paid by volume purchasers, and may even permit the inclusion of a small purchaser where otherwise participation in the offering is exclusive to a particular class of buyers. The site is effective to implement the consumers' participation via a virtual purchase collective. The site includes posted data informative of the future availability of units to be purchased, and optionally of their quality, specifications and/or projected costs; posted rules, or instructions on how to get access to the rules or otherwise learn them, which delineate at least some of the rules of the auction in which consumers can bid, and how the collective will determine the number of units the collective will attempt to purchase and the price it is willing to pay. The rules also will delineate the conditions under which a participating consumer will earn a right to receive fulfillment of at least a portion of its bid. The site also includes means for receiving bids from consumers electronically. The bids are commitments to purchase specified numbers of units at a bid price and typically are made before the collective has purchased the units. In this respect, the entity operating the website is akin to a selling agent as opposed to a reseller. It acts as a virtual electronic syndicate organized to purchase a large number of units of the product or service in a market efficient way on behalf of consumers. The data "posted" at the website need not be directly presented, but rather may be presented via hyperlinks to the websites or other sources, e.g., of sellers or distributors of units of the type to be purchased by the collective.

The invention also provides means by which a set of potential purchasers of a varied set of products or services are sorted automatically into virtual electronic syndicates or collectives, each bidding for and buying a subset of products or services, and wherein the composition of each collective may vary and each purchaser may be a member of various collectives simultaneously. In this manner of self sorting, the purchasing power of collectives is available for each purchase and for each purchaser even though no two purchasers bid for the same set of products and services. Such automated sorting is greatly facilitated through the connectivity afforded by the internet as well as the methods described in this invention.

This process is further described by the following illustrative example: Purchasers P1, P2, P3, P4 and P5 participate in an auction to purchase Goods and Services GS1, GS2, GS3,

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GS4, GS5. To simplify the example, assume the price offered by each purchaser for each good or service is at or above the price at which the seller is willing to sell the product. For this example also assume that purchase by just a few purchasers affords the advantage of the collective described above. (Of course, the example can be generalized to include a sufficient number, for example, hundreds or tens of thousands of purchasers of each type of good or service sufficient to benefit from the advantages of group buying.)

Accordingly, P1 bids for GS1 and GS4. P2 bids for GS1, GS2 and GS5. P3 bids for GS2 and GS3. P4 bids for GS3, GS4 and GS5. P5 bids for GS1, GS2, GS3 and GS5. The collectives that are automatically formed by the methods described herein comprise: Collective 1 (COLL1) that buys GS1 for P1, P2 and P5. COLL2 that buys GS2 for P2, P3 and P5. COLL3 that buys GS3 for P3, P4 and P5. COLL4 that buys GS4 for P1 and P4. COLL5 that buys GS5 for P2, P4, and P5. Note that each of the purchasers acquires the goods with the buying power of a collective even though no other purchaser in the set described offers to purchase the same goods. In this manner, aggregation and disaggregation of buyers provided through the methods and systems described herein allows sets of disparate purchasers to profit from the benefits of virtual, online, self sorting collectives.

A major advantage of the invention is that it permits small volume purchasers such as consumers at retail not only to obtain the products they desire at lower prices, but also in many instances permits them to participate in an offering which otherwise would exclude them.

In this regard, an important embodiment of the invention constitutes a virtual electronic syndicate of investors which permits them to participate in new offerings such as follow-on offerings and initial public offerings underwritten by investment bankers, or to take advantage of lower prices characteristic of block trades. It should be noted that the entity implementing the process and system, or maintaining the web page, acts as a broker, a purchasing agent, or a virtual electronic syndicate, and does not itself necessarily engage in underwriting or wholesaling in any real sense, or in consignment. Typically, when an attractive offering is announced, the underwriter has a definite assessment of the price per share of the securities to be issued based on assessments of demand and the countless factors which generate demand. In the course of pricing the deal, representatives of the issuing entity commonly go on a "road show" where business plans and prospects of the company are explained to potential investors. Normally, retail purchasers of small numbers of securities cannot privately purchase shares of this offering, unless he or she is an investor in a mutual fund which bids successfully for the new offering, or a

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5 favored investor of a securities brokerage house which receives an allocation of shares from the underwriter for sale to its retail customers. If the offering has been successful, retail investors can buy shares after the offering when they become publicly traded. However, almost by definition, the demand generated by many such small investors will increase the value of the shares. The virtual electronic syndicate entity disclosed herein may be used by such investors to participate in the original offering, thus permitting them to buy at a price they may otherwise not be able to obtain, or to buy at a time when non-participating retail investors cannot buy at all.

10 Thus, this important embodiment of the invention provides a method of trading securities between an offeror of large blocks of shares of the securities and a consumer of small numbers of shares at a price per share to the consumer competitive with the price paid by bulk purchasers of the securities. The method comprises accumulating at auction under rules pre-agreed with consumers retail bids made electronically by a large number of consumers. The bids indicate the consumers' respective commitments, preferably irrevocable commitments, to purchase a number of the shares and the price they are willing to pay for that number. The accumulated bids, either  
15 continuously or after the bidding is closed, are used to establish the terms of at least one, typically several, collective bids to be made to the offeror for a large block of the shares. Next, one or more offers are made to purchase a block of the shares at a price per share determined by the accumulated irrevocable bids in hand. When a collective bid is accepted, the shares obtained are distributed in accordance with the rules of the auction, which determines the number of  
20 shares each successful bidder is to receive and the cost of those shares. Thus, the virtual electronic syndicate, if it attracts enough participation, can compete very effectively with large institutional investors in newly offered securities. Indeed, it is at least theoretically possible that such virtual collectives could become a major player in the financial markets.

25 The electronic bids preferably are made by the consumer investors via the internet or direct lines at, for example, a website which, in addition to having interactive displays through which a consumer can make a bid, includes data in compliance with regulations, including disclosure regulations, governing the sale of securities as well as data informative of the potential value of the shares. Such data may be presented directly or via links to the sites of others. Where the investors are subscribers to an ongoing service offering such new issues, it may be  
30 possible to establish permission from each shareholder to deliver all required SEC documents electronically. Also, it is likely that in the future paper stock certificates may become obsolete, thus permitting evidence of ownership to reside in computers as virtual shares.

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The method may be used to purchase shares from introductory public offerings or follow-on offerings of equity, debt, or combined debt and equity instruments such as convertible debentures. The auction rules may vary, depending on many circumstances, but often will permit bidders to make multiple alternative bids for different numbers of shares at different prices. It also is contemplated that the auctioning procedure may be repeated before or after closure of the offering in response to changing market conditions or for the purchase of over allotments. The posting of data may include information about the projected share price, regulatory filings, research reports, details about the business plans of the company issuing the shares, details about personnel of the company issuing the shares, the general financial condition of the company, risk factors involved with projecting the future value of shares, the competitive environment the company operates in, the trading history of the shares of securities of competitors of the issuing company, and the history of previous offerings of the offeror, such as the underwriter. The virtual electronic syndicate may make multiple bids to the offerors of the securities wherein bids for larger blocks of shares are at a lower cost per share. The electronic syndicate may collect a commission from retail purchasers or consumers who took delivery and paid for their respective allotted shares, or where permitted by law, collect a commission from the offeror which accepted the syndicate's bid. Alternatively or in addition, the entity running the virtual electronic purchase syndicates may enroll subscribers who are notified electronically of upcoming buying opportunities, who choose to participate as desired, and pay a subscription fee for the service.

The system embodying the invention designed for implementing the foregoing comprises means electronically accessible to consumers for recording retail bids made electronically by the consumers at auction under pre-agreed rules, which bids preferably indicate the consumers' respective commitments to buy a number of shares of a particular offering and the price they are willing to pay for that number. Electronic means such as a suitably programmed computer processes the data representative of the retail bids accumulated by the recording means and determines terms of one or more collective bids to be made to an offeror for a large block of the shares of the securities. Additionally, the system may comprise means for identifying which bidding consumers are entitled to shares and for determining the number and price of the shares to be delivered to each consumer upon acceptance by the offeror of a collective bid, all in accordance with the rules of the auction. The system also preferably comprises means for posting data electronically accessible to the consumers informative of the availability and optionally of the potential value of the offered shares and rules governing the purchase of shares

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through the system. Also preferably, the system includes means for electronically delivering all regulatory information necessary to complete transfer of the shares to successful bidders for the shares.

Referring to the drawing, the sole figure is a block diagram helpful in explaining the method and system of the invention. As illustrated, a virtual purchasing collective, or virtual electronic syndicate communicates via a network with multiple prospective retail purchasers (PRPs) and with at least one seller of units of product to be purchased by the collective on behalf of a subset of the prospective retail purchasers participating in the method and system. The network advantageously may be the internet or a dedicated network available by direct links to subscribers. Certain of the information transmitted between the prospective purchasers and the collective may be quite sensitive and appropriate encryption technology may be necessary or desirable to assure confidentiality of the communications.

The method begins when the entity posts notice of upcoming sale of product of a type described above, which notice is accessed electronically by consumers considering making a purchase of such goods. It is necessary that the prospective purchasers understand and agree to the rules of the purchase offer, and are able intelligently to assess the nature, quality and value of the units of product to be offered. The retail purchasers may obtain such information off the network, available there because it is posted by the purchasing collective or, in the case of descriptions of the goods subject to a transaction, perhaps by the seller or distributor of the goods. Typically, each purchaser will have set up an electronic account with the entity operating the virtual purchasing collective which facilitates secure information transfer, payment by successful purchasers, and delivery of goods purchased. The rules of the auction may be posted on the network or delivered to subscribers in hard copy. In any event, whether or not the system is run with a network of subscribers or simply broadcast to the public, participants must understand that their bids are binding commitments to purchase and must arrange for appropriate transfer of funds, preferably without fail should they succeed in their bid. If a consumer defaults, the collective may optionally renegotiate with the seller(s) or offeror(s), or may redistribute the extra units of the product, preferably to members of the collective who expressed interest in, but did not receive, units of the product. The identity and characteristics of the prospective retail purchasers may vary widely. By way of example in the area of security sales, the PRPs may be amateur investors purchasing stock for their own accounts, investment trusts or small brokerage

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businesses seeking to purchase securities on behalf of their customers, or any other entity which seeks to benefit from the buying power of the purchasing collective.

As a randomly selected example of sale of consumer products, the PRPs may be consumers of children's books such as elementary schools of varying size seeking to purchase various quantities of fourth grade reading texts. Irrespective of the nature of the goods, those of the PRPs which choose to participate electronically transmit bids to the virtual purchasing collective via the network. The bids take the form of binding offers to purchase a set number of units of product for a set price.

In the textbook example, it may be that a single copy of the book costs \$20, 20-500 books are available at \$15 each, and in lots of 500 or more the price is \$10 each. Presume participant 1 is a parent homeschooling his twin fourth grade sons. Participant 2 is a small private school in Europe seeking to use the books to teach English to a class of 10. Participant 3 is a large public school district seeking to purchase 3,200 books. Participant 4 is a group of mid-sized school districts, each of which seeks to purchase between 100 and 600 books. Participant 5 is a school district seeking to purchase 150 books. Bids are placed by each of the entities in accordance with the table set forth below.

TABLE A

PRP	UNITS BID	PRICE/UNIT BID	SAVINGS/UNIT (TOTAL SAVINGS FROM LIST)
1. Parent	2	\$15*	\$11 (22)
2. Small Private School	10	\$8	--
3. Large District	3200	\$5	--
4. Group of Mid-Sized Districts	100	\$13*	\$6 (600)
	200	\$9*	\$6 (1200)
	300	\$12*	\$6 (1800)
	360	\$10*	\$6 (1950)
	600	\$9*	\$1 (600)
5. Mid-Sized District	150	\$8	--

As can be appreciated from the Table, participant 1, buying a small number but seeking to benefit from the collective purchase, bids \$15 per unit or \$30 for the two books. Participant 1

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has no way of knowing who other bidders may be and is unaware that a number of school districts also seek the book. Participant 2 bids a low price of \$8 believing that its bid will be commingled with many hundreds of school districts as it believes the book is very popular and that it will benefit from a volume price discount if the bidder accepts a very large order far in excess of the 500 units needed to obtain the price of \$10. Participant 3 knows it can purchase the books at \$10 each and suspects that it can negotiate privately to get the price down to \$7. It accordingly bids \$5 seeking to benefit from the collective. The participants listed as number 4 are a group of school districts which, knowing the list prices, seek to benefit from the leverage of the cooperative offering between \$9 and \$13 per unit from between 100 and 600 books.

Participant 5 is similar to the members of the group in participant 4, but seeks an exceptional bargain, bidding \$8.

Each participant has reviewed, perhaps, a sample of the book shown to it by a salesperson of the bookseller. Alternatively, it has accessed information about the book including volume discounts on its purchase, terms of delivery, etc., on line at web pages hosted either by the bookseller, reviewers or distributors of the book, or possibly by the virtual purchasing collective recognizing a market in the book.

Each of the participants over, for example, a two week period selected by the collective to coincide with the purchasing cycle of school books, places its bid as set forth in the Table through the network, and the bids are logged in at the purchasing collective. At one or more points during the course of the bidding process, bids stored in memory are assessed by computer to generate collective bids.

A simple analysis of potential collective bids is tabulated below.

#### TABLE B

\*Total ordered at  $\geq 5$  is 4912

\*Total ordered at  $\geq 8$  is 1712

\*Total ordered at  $\geq 9$  is 1552

Total ordered at  $\geq 10$  is 1012

\*Total ordered at  $\geq 12$  is 502.

Where bidding has transpired as indicated in the Table above, for example, at the close of a preset bidding period, there have been bids of \$5 or more for 4,912 units, \$8 or more for 1,712 units, \$9 or more for 1,552 units, \$10 or more for 1,012 units, and \$12 or more for 502 units (as

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set forth in Table A). The collective then decides to make four bids to the bookseller, that is, the bids for the amounts and at the prices set forth in the starred entries in Table B. These are transferred to the seller for its consideration. The seller, knowing that it has 2,000 books remaining in inventory, anticipating a stream of small orders at the \$15 to \$20 cost per unit price, and realizing that it may not sell out this printing of the book this year, chooses to sell 1,552 books at \$9 per unit.

Upon receipt of this information, the virtual purchasing collective causes the 1,552 books to be delivered to those of the bidders whose bid was equal to or greater than \$9 per unit. This means that participant 1 gets its two books delivered for \$18, saving \$6 per book or a total of \$12. The mid-sized district which ordered 600 books could have bought them at \$10 each, but has saved \$1 per book for a total savings of \$600. The remaining successful bidders save \$6/book over the price they could otherwise obtain, saving from \$2,900 to \$600 on the purchase. Unsuccessful bidders receive no books, having misjudged the market. Depending on many market factors and on the nature of the goods offered, the entire process, excepting delivery, may take a few minutes or several months.

As another example, an auction can be held to create a virtual collective to participate in an initial public offering as follows. ABCD company files a registration statement with the Securities and Exchange Commission describing details of the offering and prospects of the company. This filing is often known as prospectus or "red herring." ABCD Co. is represented by IB1 Investment Bank which acts as lead manager and underwrites the offering together with other investment banks which are members of the underwriting syndicate. In this example, 2.5 million shares are offered to the public at a price range between \$12 and \$14 per share.

During the period between the filing of the document and its approval by the SEC, securities regulations prohibit attempts to sell the issue. During this time, the ABCD Co. management team, through a road show coordinated by IB1, presents the company to institutions and retail brokerage divisions of the underwriting firms. Through this process, indications of interest (but not firm offers to purchase) which collectively represent a "book" of indications, is gathered by the syndicate manager who works for the IB1.

Simultaneously with the conventional offering process, the agent entity described herein presents through a website information regarding the company, the upcoming offering, and notifies potential participants of the retail auction. After the offering is declared effective, and before it is priced and distributed by IB1, the on-line auction for the IPO of ABCD Co. is



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conducted. The following are example bids received among the hundreds to tens of thousands that can be expected through such an auction. On-line retail buyer 1(OLRB1) bids for 1000 shares at \$16/share. OLRB2 bids for 500 shares at \$12/share. OLRB3 bids for 100 shares at \$20/share. OLRB4 bids for 5000 shares at \$10/share. These are all unconditional offers to purchase at or below the respective bid prices.

At the close of the auction the entity has received bids to purchase 1,750,000 shares: 50,000 shares at or below \$16/share; 200,000 shares at or below \$14/share; 300,000 shares at or below \$13/share; 400,000 shares at or below \$12/share; and 800,000 share at or below \$10/share. These bids are presented to the IB1 for inclusion into the "book" of orders. At the close of this process, IB1 offers 250,000 shares at \$12/share to the auction agent entity which is acting as the virtual online collective's agent. In distributing the shares, OLRB1 is provided 1000 shares at \$12/share and OLRB3 is provided 100 shares at \$12/share. OLRB2 obtains no shares as there are bids for in excess of 250,000 shares at prices in excess of \$12.00. OLRB4 gets no shares as it bid below \$12.00. Rules could govern share distribution in any way agreed in advance, or in accordance with the rules of the fixed price lot dutch auction described above. The auction manager receives a commission from each buyer through this process.

The invention may be embodied in other specific forms.

United States Patent Application No. 09/255,294, filed February 22, 1999, is herein incorporated by reference.